

CLAIMS

1. An electric power supply system for LED lighting unit that constitutes a work imaging system to take an image of a work as an object to be taken by an imaging device such as a
5 CCD camera and to process the image so as to inspect a flaw formed on a surface of the work or to read a mark such as an alignment mark, and characterized by comprising an LED lighting unit that has an LED conducting circuit including at least an LED and a resistor for type
10 identification having resistance corresponding to a specification or a characteristics of use of the LED conducting circuit and that irradiates light on the work and an electric power supply unit that has a type identify portion consisting of a resistor measuring circuit that can
15 be connected with the resistor for type identification and a constant current control portion that supplies a control current in an arbitrary range not over the maximum allowable current of the LED conducting circuit set based on the resistance of the resistor for type identification measured
20 by the type identify portion to the LED conducting circuit.

2. The electric power supply system for LED lighting unit described in claim 1, further comprising a light control signal receive portion that receives a light control signal
25 and a range switch portion that can be switched to at least two states, an ordinary state and a low electric power consumption state and so arranged that the constant current control portion supplies a control current corresponding to

a value of a received light control signal to the LED
conducting circuit, and

so arranged in case the range switch portion is switched to
the ordinary state, a control current having the maximum
5 allowable current is supplied to the LED conducting circuit
when a value of the received light control signal is the
maximum, meanwhile
in case the range switch portion is switched to the low
electric power consumption state, a control current smaller
10 than the maximum allowable current is supplied to the LED
conducting circuit even though a value of the received light
control signal is the maximum.

3. The electric power supply system for LED lighting unit
15 described in claim 1, wherein the maximum allowable current
can be set in a graded manner based on resistance of the
resistor for type identification.

4. An electric power supply system for LED lighting unit
20 characterized by comprising an LED lighting unit that has an
LED conducting circuit including at least an LED and a
resistor for type identification having resistance
corresponding to a specification or a characteristics of use
of the LED conducting circuit and
25 an electric power supply unit that supplies electric power
to the LED conducting circuit of the LED lighting unit and
that has a type identify portion consisting of a resistor
measuring circuit that can be connected with the resistor

for type identification and a constant current control portion that supplies a control current in an arbitrary range not over the maximum allowable current of the LED conducting circuit set based on the resistance of the resistor for type identification measured by the type
5 identify portion to the LED conducting circuit.

5. The electric power supply system for LED lighting unit described in claim 4, further comprising a light control
10 signal receive portion that receives a light control signal and a range switch portion that can be switched to at least two states, an ordinary state and a low electric power consumption state and so arranged that the constant current control portion supplies a control current corresponding to
15 a value of a received light control signal to the LED conducting circuit, and
so arranged in case the range switch portion is switched to the ordinary state, a control current having the maximum allowable current is supplied to the LED conducting circuit
20 when a value of the received light control signal is the maximum, meanwhile
in case the range switch portion is switched to the low electric power consumption state, a control current smaller than the maximum allowable current is supplied to the LED
25 conducting circuit even though a value of the received light control signal is the maximum.

6. The electric power supply system for LED lighting unit

described in claim 4, wherein the maximum allowable current can be set in a graded manner based on resistance of the resistor for type identification.

- 5 7. An electric power supply system for LED lighting unit characterized by comprising an LED lighting unit that has an LED conducting circuit including at least an LED and a resistor for type identification having resistance corresponding to a specification or a characteristics of use
10 of the LED conducting circuit and connected with the LED conducting circuit in parallel and an electric power supply unit consisting of a constant current supply unit that can be connected with the LED conducting circuit in order to supply electric power to the
15 LED conducting circuit of the LED lighting unit and that comprises a type identify portion to measure resistance of the resistor for type identification by impressing a measure voltage of a level that does not affect an operation of the LED conducting circuit to the resistor for type
20 identification connected with the LED conducting circuit for an extremely short time, a constant current control portion that supplies a control current in an arbitrary range not over the maximum allowable current of the LED conducting circuit set based on the resistance of the resistor for type
25 identification that is connected in parallel that is measured by the type identify portion to the LED conducting circuit after the measure voltage is impressed, and a breaking of wiring identify portion that monitors a

condition of electric power supply/a connecting condition
between the LED lighting unit and the electric power supply
unit and that reboots the type identify portion when the
condition of electric power supply/the connecting condition
5 is broken.

8. The electric power supply system for LED lighting unit
described in claim 7, further comprising a light control
signal receive portion that receives a light control signal
10 and a range switch portion that can be switched to at least
two states, an ordinary state and a low electric power
consumption state and so arranged that the constant current
control portion supplies a control current corresponding to
a value of a received light control signal to the LED
15 conducting circuit, and
so arranged in case the range switch portion is switched to
the ordinary state, a control current having the maximum
allowable current is supplied to the LED conducting circuit
when a value of the received light control signal is the
20 maximum, meanwhile
in case the range switch portion is switched to the low
electric power consumption state, a control current smaller
than the maximum allowable current is supplied to the LED
conducting circuit even though a value of the received light
25 control signal is the maximum.

9. The electric power supply system for LED lighting unit
described in claim 7, wherein the maximum allowable current

can be set in a graded manner based on resistance of the resistor for type identification.